

Message Text

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ORIGIN NRC-07

INFO OCT-01 ARA-14 EUR-12 EA-09 NEA-10 ISO-00 OES-07
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APPROVED BY: OES/NET/IM: D B HOYLE
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P 041714Z AUG 77
FM SECSTATE WASHDC
TO ZMEMBASSY BERN PRIORITY 5087/88/89
AMCONSUL BOMBAY PRIORITY
ZEN/MEMBASSY BONN PRIORITY 3602/03/04
AMEMBASSY BRASILIA PRIORITY
AMEMBASSY BRUSSELS PRIORITY
AMEMBASSY COPENHAGEN PRIORITY
AMEMBASSY HELSINKI PRIORITY
AMEMBASSY LONDON PRIORITY
AMEMBASSY MADRID PRIORITY
AMEMBASSY MEXICO PRIORITY
AMEMBASSY NEW DELHI PRIORITY
AMEMBASSY PARIS PRIORITY
AMCONSUL RIO DE JANEIRO PRIORITY
AMEMBASSY ROME PRIORITY
AMEMBASSY STOCKHOLM PRIORITY
AMEMBASSY TAIPEI PRIORITY
AMEMBASSY TEHRAN PRIORITY
AMEMBASSY THE HAGUE PRIORITY
AMEMBASSY TOKYO PRIORITY
AMEMBASSY VIENNA PRIORITY
AEMBASSY OTTAWA PRIORITY 2724/25/26
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EMBASSY PASS TO SCIONS AND SCIATTS

C O R R E C T E D C O P Y PARA 14 LAST 3 LINES OMITTED AND ALSO
SEOUL OMITTED AS AN ADDEE.

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E.O. 11652: N/A

TAGS: TECH

SUBJECT: NRC ISSUES REPORT ON NUCLEAR MATERIAL INVENTORY
DIFFERENCES (MUF) AT LICENSED COMMERCIAL NUCLEAR FUEL
FACILITIES --

REF: A. STATE 181339 (NOTAL), B. STATE A-633

1. THE FOLLOWING IS THE TEXT OF AN NRC NEWS RELEASE DATED
AUGUST 5, 1977. PLEASE PASS ON AN URGENT BASIS TO THE
TECHNICAL NOTIFICATION ADDRESSEES LISTED IN REF. B.

2. THE NEWS RELEASE SUMMARIZES AN NRC REPORT WHICH IS
SIMILAR TO THE ERDA REPORT SUMMARIZED IN REF. A.

3. QUOTE THE NUCLEAR REGULATORY COMMISSION, IN RESPONSE TO
REQUESTS, HAS ISSUED A REPORT ON INVENTORY ACCOUNTING
DIFFERENCES AT NRC-LICENSED FACILITIES POSSESSING HIGH
ENRICHED URANIUM, PLUTONIUM, AND URANIUM-233. THESE ARE
STRATEGIC NUCLEAR MATERIALS BECAUSE, IN SUFFICIENT
QUANTITIES, THEY HAVE THE POTENTIAL FOR BEING USED TO MAKE
EXPLOSIVES. -

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4. THIS IS THE FIRST REPORT OF ITS KIND AND COVERS
FACILITIES LICENSED BY THE FORMER ATOMIC ENERGY COMMISSION

BETWEEN JANUARY 1, 1968, AND JANUARY 19, 1975, AND AFTER
THAT BY THE NRC. SU0SEQUENT REPORTS WILL BE ISSUED
PERIODIC IPFUKBLTHIS REPORT COVERS THE PERIOD FROM 1968 TO
SEPTEMBER 30, 1976.

5. A SIMILAR REPORT ON GOVERNMENT-OWNED FACILITIES USING
THESE MATERIALS IS BEING ISSUED BY THE ENERGY RESEARCH AND
DEVELOPMENT ADMINISTRATION. ERDA'S REPORT ALSO COVERS
FACILITIES LICENSED BY THE FORMER AEC BEFORE 1968.
FACILITIES POSSESSING LOW ENRICHED URANIUM, PRIMARILY USED
FOR FUEL IN THE CURRENT GENERATION OF POWER REACTORS, ARE
NOT INCLUDED. SUCH URANIUM IS NOT A WEAPONS-USABLE
MATERIAL.

6. THE NRC-LICENSED FACILITIES FOR WHICH DATA ARE BEING
RELEASED ARE OWNED AND OPERATED BY PRIVATE FIRMS AND ARE
PRIMARILY INVOLVED IN THE PRODUCTION OF NUCLEAR FUEL FOR
DEFENSE AND RESEARCH PURPOSES.

7. INVENTORIES ARE ONLY ONE MECHANISM USED BY THE NRC AND ITS LICENSEES TO DETER OR DETECT THEFT OF NUCLEAR MATERIAL. THE NRC REQUIRES LICENSEES POSSESSING SIGNIFICANT QUANTITIES OF STRATEGIC NUCLEAR MATERIAL TO PROTECT AGAINST THEFT BY MAINTAINING EFFECTIVE PHYSICAL SECURITY, INTERNAL CONTROL OF MATERIAL, AND ACCOUNTING SYSTEMS. NRC INVESTIGATIONS OF LICENSEE INVENTORY DIFFERENCES DESCRIBED IN THE REPORT HAVE DISCLOSED NO EVIDENCE THAT SIGNIFICANT QUANTITIES OF THESE MATERIALS HAVE BEEN STOLEN.

8. INVENTORY DIFFERENCES ALSO HAVE BEEN REFERRED TO AS "MATERIAL UNACCOUNTED FOR" OR "MUF." THESE TERMS RELATE TO THE DIFFERENCE BETWEEN THE AMOUNT OF MATERIAL WHICH BOOK-KEEPING ENTRIES INDICATE IS PRESENT, AND WHAT A PHYSICAL UNCLASSIFIED

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INVENTORY SHOWS TO BE ON HAND AT THE END OF AN ACCOUNTING PERIOD. SINCE THE AMOUNT OF MATERIAL SHOWN ON THE BOOKS AND THE AMOUNT ON HAND ARE SUBJECT TO MEASUREMENT ERROR, THE TWO FIGURES ARE SELDOM IDENTICAL, THUS CREATING AN INVENTORY DIFFERENCE.

9. SEVERAL FACTORS CONTRIBUTE TO THE DIFFERENCES, WHICH MAY APPEAR AS LOSSES OR GAINS IN MATERIAL FROM ONE INVENTORY TO ANOTHER. SOME MATERIAL AT THE TIME OF AN INVENTORY IS HELD UP IN PROCESS EQUIPMENT; THEREFORE, MEASUREMENT FLUCTUATIONS THAT RESULT FROM THE DIFFICULTY IN MEASURING HELD-UP MATERIAL WILL BE REFLECTED AS INVENTORY DIFFERENCES. OTHER FACTORS INCLUDE CLERICAL BOOKKEEPING ERRORS, REPORTING MISTAKES, OPERATOR ERRORS AND DIFFICULTIES IN MEASURING SCRAP.

10. THE REPORT POINTS OUT THAT INVENTORY DIFFERENCES ARE NOT UNIQUE TO THE NUCLEAR INDUSTRY. A NUMBER OF OTHER INDUSTRIES IN WHICH THE FINAL PRODUCT CANNOT BE COUNTED BUT RATHER REQUIRE CHEMICAL OR PHYSICAL PROCESSING ALSO EXPERIENCE INVENTORY DIFFERENCES. SIGNIFICANT IMPROVEMENTS HAVE BEEN MADE IN MEASUREMENT TECHNIQUES IN THE NUCLEAR INDUSTRY, BUT IT STILL IS NOT POSSIBLE FOR MATERIAL BALANCES TO BE CLOSED PERFECTLY.

11. IF AN INVENTORY DIFFERENCE APPEARS EXCESSIVE, THE LICENSEE IS REQUIRED TO TAKE INVESTIGATIVE ACTION. THE LICENSEE MAY BE REQUIRED TO SHUT THE PLANT DOWN AND CONDUCT A THOROUGH REINVENTORY, INCLUDING A CLEANOUT OF THE ENTIRE SYSTEM, TO RECONCILE THE DIFFERENCE.

12. THE TOTAL INVENTORY DIFFERENCE AT LICENSED FACILITIES UNCLASSIFIED

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FROM JANUARY 1968 TO SEPTEMBER 1976 FOR HIGH ENRICHED URANIUM WAS 542 KILOGRAMS. TWO LICENSEES ACCOUNTED FOR 56 PERCENT, (306 KILOGRAMS) OF THE TOTAL. SPECIAL NRC INVESTIGATIONS AT THE LICENSEES' FACILITIES -- OWNED BY BABCOCK & WILCOX AT APOLLO AND LEECHBURG, PENNSYLVANIA, AND BY NUCLEAR FUEL SERVICES AT ERWIN, TENNESSEE -- REVEALED PREVIOUSLY UNIDENTIFIED AND UNDOCUMENTED PROCESS LOSSES AT APOLLO AND LEECHBURG AND ERRORS IN ACCOUNTING AND UNCERTAINTIES IN MEASUREMENT SYSTEMS AT ALL THREE FACILITIES AS MAJOR CONTRIBUTORS TO THE DIFFERENCES.

13. FOR PLUTONIUM, THE TOTAL INVENTORY DIFFERENCE FOR THE 1968 TO 1976 PERIOD WAS 32.8 KILOGRAMS. FOUR FACILITIES ACCOUNTED FOR 85 PERCENT OF THE DIFFERENCE. THE FACILITIES ARE AT LEECHBURG, PENNSYLVANIA, OWNED BY BABCOCK & WILCOX; AT CRESCENT, OKLAHOMA, OWNED BY KERR-MCGEE BUT NOW SHUT DOWN; AND ONE EACH AT ERWIN, TENNESSEE, AND WEST VALLEY, NEW YORK, OWNED BY NUCLEAR FUEL SERVICES, NEITHER OF WHICH IS CURRENTLY PROCESSING PLUTONIUM. MEASUREMENT UNCERTAINTIES, ACCOUNTING ERRORS AND MATERIAL HELD UP IN PROCESS WERE MAJOR CONTRIBUTORS TO THE DIFFERENCES.

14. ON A YEAR-TO-YEAR BASIS, THE INDUSTRY-WIDE FIGURES SHOW A DOWNWARD TREND IN INVENTORY DIFFERENCES FOR BOTH HIGH ENRICHED URANIUM AND PLUTONIUM, ALTHOUGH THE AMOUNT OF MATERIAL HANDLED BY THE LICENSED FACILITIES HAS BEEN ON THE INCREASE. THIS IS ATTRIBUTED TO IMPROVED MEASUREMENT TECHNIQUES AND A STRENGTHENING OF NRC REGULATIONS FOR CONTROLLING INVENTORIES IN 1971 AND 1974.

15. INVENTORIES ARE ONLY ONE MECHANISM USED BY THE NRC AND ITS LICENSEES TO PROTECT AGAINST THEFT OF NUCLEAR MATERIALS. LICENSEES WITH SIGNIFICANT QUANTITIES OF STRATEGIC SPECIAL NUCLEAR MATERIALS ARE REQUIRED TO PROTECT AGAINST THEFT OR DIVERSION THROUGH THE MATERIAL

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ACCOUNTING SYSTEM AND BY MAINTAINING EFFECTIVE PHYSICAL SECURITY AND TIGHT INTERNAL CONTROLS OVER MATERIALS.

16. THIS INTEGRATED SAFEGUARDS SYSTEM, COUPLED WITH INVESTIGATIONS OF INVENTORY DIFFERENCES, PROVIDES A HIGH DEGREE OF ASSURANCE AGAINST THEFT. TODAY'S PHYSICAL SECURITY SYSTEM EMPLOYS ARMED GUARDS, MULTIPLE ARMED

FENCES AND SOPHISTICATED COMMUNICATIONS CAPABILITIES AS THE PRIMARY COMPONENTS AGAINST OPEN THEFT. THE INTERNAL CONTROL SYSTEM INCLUDES PERSONNEL SEARCHES, A TWO-MAN RULE (NO PERSON ALLOWED IN KEY AREAS ALONE) AND SENSITIVE DETECTION EQUIPMENT TO PROTECT AGAINST THEFT BY INSIDERS. RECENT PROPOSALS WOULD REQUIRE EMPLOYEES NOT ALREADY CLEARED TO HAVE SECURITY CLEARANCES AND WOULD UPGRADE THE CRITERIA FOR TRAINING AND QUALIFYING GUARDS.

17. THE MATERIAL ACCOUNTING SYSTEM, USING PHYSICAL MEASUREMENTS, STATISTICAL TESTS, AND BIMONTHLY INVENTORIES, SERVES MAINLY TO MONITOR THE PERFORMANCE OF THE SAFEGUARDS SYSTEM AS A WHOLE.

18. TOGETHER, THESE SYSTEMS ARE DESIGNED TO ALERT COMPANY MANAGEMENT AND THE NRC TO PROCESSING PROBLEMS AND MATERIAL LOSSES AND TO HELP DETERMINE WHETHER AN INVENTORY DIFFERENCE IS THE RESULT OF ACCOUNTING ERRORS OR A MEASUREMENT PROBLEM, OR THE RESULT OF A LOSS OR THEFT OF NUCLEAR MATERIAL. UNQUOTE

19. COPIES OF THE NRC REPORT "REPORT ON STRATEGIC SPECIAL NUCLEAR MATERIAL INVENTORY DIFFERENCES," NUREG-0350 WILL BE AIR POUCHED TO THE ATTENTION OF THE SCICONS & SCIATTS TO BE PASSED TO THE ADDRESSEES OF REF. B.

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20. NRC PRESS RELEASE IS EMBARGOED UNTIL 2 P.M. WASHINGTON TIME AUGUST 4.

21. FOR RECIPIENTS OF REFTEL A: REFTEL A IS NOW DECLASSIFIED AND INFORMATION CONTAINED THEREIN AS WELL AS ERDA REPORT CAN BE MADE AVAILABLE TO APPROPRIATE OFFICIALS OF HOST GOVERNMENTS TOGETHER WITH NRC RELEASE ANYTIME AFTER 2 P.M. WASHINGTON TIME AUGUST 4. CHRISTOPHER

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